INHIBITION OF NEMATODE DEVELOPMENT WITH THIABENDAZOLE*

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In previous papers (1, 2, 3), the effectiveness of thiabendazole in "creeping eruption" has been reported, and the other uses of the drug have been reviewed. Another report (4) described in detail the observation that this drug has no effect *in vitro* on the infective stage of *Ancylostoma caninum* larvae. After exsheathment by the use of CO_2 the organism did not become susceptible to thiabendazole. It was our opinion that the organism must progress in its development within the skin to a stage capable of ingesting the drug. It has generally been assumed that the organism does not progress beyond the infective stage within human skin.

Our work was based on the assumption that the drug itself is effective and that metabolism is not required. However, almost all published studies on thiabendazole have been limited to therapy of clinical disease. We know of no previously published data on *in vitro* effectiveness against nematodes. The drug is effective *in vitro* against the dermatophytes (5).

METHOD

The stools of five dogs with known natural hookwork infection were gathered separately. Each stool was separately mixed and divided equally into four petri plates, each containing an equal quantity of charcoal. Three of the plates from each animal were used as controls. Thiabendazole† was added to the other plate in a concentration of 125 micrograms/ml (the quantity of charcoal was not taken into consideration in figuring the volume, but the volume of the stool was considered).

The plates were incubated at room temperature and were examined for larvae at seven and ten days. Every control plate contained larvae in large quantities. Every plate with thiabendazole was completely negative for the development of larvae.

CONCLUSION

Thiabendazole produced complete inhibition of development of *A. caninum* eggs into infective larvae. To our knowledge this is the first report of *in vitro* activity of thiabendazole against a nematode. This possibly means that the drug is acting unchanged in the body and not depending on a metabolic product. Or it may be possible that metabolic changes take place in the parasite, rendering it susceptible to the drug.

SUMMARY

Thiabendazole (125 micrograms/ml) completely inhibited the development of the infectious stage of *A. caninum* from the eggs. The fact that thiabendazole is effective *in vitro* further substantiates the impression that the organism is susceptible to the ingested drug. The clinical effectiveness of the drug makes it seem likely that the organism progresses in development within the skin to a stage where it ingests the drug.

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